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Portable Magnets.

LETTERS PATENT to William Darlow, of North Woolwich Road, Canning Town, in the County of Essex, for the Invention of "IMPROVEMENTS IN THE CONSTRUCTION OF PORTABLE MAGNETS FOR CURATIVE AND OTHER PURPOSES."

Sealed the 22nd November 1872, and dated the 1st June 1872.

PROVISIONAL SPECIFICATION left by the said William Darlow at the Office of the Commissioners of Patents, with his Petition, on the 1st June 1872.

I, WILLIAM DARLOW, of North Woolwich Road, Canning Town, in the County of Essex, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN THE CONSTRUCTION OF PORTABLE MAGNETS FOR CURATIVE AND OTHER PURPOSES," to be as follows:—

This Invention relates to improvements in the construction and mode of applying portable magnets for curative and other useful purposes; and the first part of my improvements consists in enclosing a magnetic compound or magnetizable matter, such as iron or steel filings or small

tings, borings, pieces of wire or other scrap iron or steel, oxide of iron steel, or other magnetizable matter mixed with any suitable gum, resinous, or bituminous matter, which, according to this part of my improvements, is spread upon the surface of a piece of leather, woven other fabric, oil silk, felt, or other fibrous material, paper, rushed, cork, india-rubber, or other suitable material, in sheets or surfac The compound or magnetizable matter thus spread upon the surface one sheet is then covered by another sheet of leather fabric or other suita material, and the two sheets with the layer of magnetic compound or magnetizable matter thus placed and enclosed between them are firmly pressed or otherwise united together.

Or the magnetic layer may be formed by first coating the pieces of fabric or material which are to enclose it on one side with gum, india-rubber, cement, or other adhesive material, and then to sift on to one of such surfaces either iron or steel filings or a magnetizable metallic oxide, over which the other prepared adhesive surface is placed, and the whole firmly pressed or otherwise united together.

I prefer to magnetize the iron or steel filings or metallic oxide after sifting the same on to one of the prepared surfaces of the fabric or material before the same is covered or enclosed by the other piece of fabric in order to effect the distribution and polarization of all the particles in one direction.

The sheets prepared as previously described are then cut up into pieces of the size required for employing them as portable magnets in forming belts, bandages, and other appliances for curative and other purposes, and are rendered magnetic in the manner well understood.

The edges of each separate portable magnet thus prepared may be protected by varnish or be otherwise covered or secured.

The magnetic compound or magnetizable matter may if desired be enclosed between two ribbons or strips of india-rubber, and be afterwards converted or vulcanized, as is well understood, and then rendered magnetic.

In place of forming portable magnets according to my Invention as previously described, I prefer to employ the magnetic metallic oxide in a pure solid state by converting wire or thin pieces of steel or iron into

oxide by subjecting them to a high temperature in a retort or otherwise whilst exposed to the action of a current of steam.

The magnetic oxide thus prepared is then made up so as to form portable magnets by enclosing it first in a case or cover of tinfoil or other non-magnetic metal or material, and which is afterwards enclosed in an envelope of leather, paper, woven or other fabric, or other suitable material, the magnets thus formed being afterwards rendered permanently magnetic in the usual manner of magnetizing iron or steel.

Portable magnets are formed in accordance with another part of my improvements by enclosing particles of steel, iron, or magnetic metallic oxide in a loose dry state, and in a thin layer between two pieces of leather, paper, woven fabric, or other suitable material, either in tubes or sheets, the particles being secured in position either by forming channels or recesses in the inner surfaces of the sheets of material employed, or by sewing or uniting the same together in sections at short distances apart, the edges being permanently secured together by gum or other adhesive matter or otherwise.

Portable magnets made up as previously described are not liable to become friable or easily broken up and destroyed, being also extremely light and portable.

The magnetizable matter or oxides enclosed as previously described may be made up into garments to be worn upon any part of the body, or it may be employed in making baths, chairs, or couches, or it may be made up into vessels or chambers for enclosing or surrounding patients in the application of magnetism for curative or health preserving purposes.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said William Darlow in the Great Seal Patent Office on the 30th November 1872.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, WILLIAM DARLOW, of North Woolwich Road, Canning Town, in the County of Essex, send greeting.

Darlow's Improvements in the Construction of Portable Magnets.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the First day of June, in the year of our Lord One thousand eight hundred and seventy-two, in the thirty-fifth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Darlow, Her special license that I, the said William Darlow, my executors, administrators, and assigns, or such others as I, the said William Darlow, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN THE CONSTRUCTION OF PORTABLE MAGNETS FOR CURATIVE AND OTHER PURPOSES," upon the condition (amongst others) that I, the said William Darlow, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said William Darlow, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, that is to say :—

This Invention relates to improvements in the construction and mode of applying portable magnets for curative and other purposes; and the first part of my improvements consists in enclosing a magnetic compound or magnetizable matter, such as iron or steel filings, or small turnings, borings, pieces of wire, or other scrap iron, or steel, oxide of iron, steel, or other magnetizable matter, mixed with any suitable gummy, glutinous, resinous, or bituminous matter, which, according to my improvements is spread upon the surface of a piece of leather, woven or other fabric, oiled silk, felt, or other fibrous material, paper, rush, reed, cork, india-rubber, or other suitable flexible material in sheets or surfaces. The compound or magnetizable matter thus spread upon the surface of one sheet is then covered by another sheet of leather, fabric, or

other suitable material, and the two sheets with the layer of magnetic compound or magnetizable matter thus placed and enclosed between them are firmly pressed or otherwise united together.

Or the magnetic layer may be formed by first coating the pieces of fabric or material which are to enclose it on one side with gum, india-rubber, cement, or other adhesive material, and then to sift on to one of such surfaces either iron or steel filings, or a magnetizable metallic oxide, over which the other prepared adhesive surface is placed, and the whole firmly pressed or otherwise united together.

I prefer to magnetize the iron or steel filings or metallic oxide (by drawing a magnet over the surface to arrange the particles) after sifting the same on to one of the prepared surfaces of the fabric or material, before the same is covered or enclosed by the other piece of fabric, in order to effect the distribution and polarization of all the particles in one direction.

The sheets prepared as previously described are then cut up into pieces of the size required for employing them as portable magnets, in forming bells, bandages, and other appliances for curative and other purposes, and which are rendered magnetic in the manner well understood.

The edges of each separate portable magnet thus prepared may be protected by varnish, or be otherwise covered or secured.

The magnetic compound or magnetizable matter after magnetization may if desired be enclosed between ribbons, sheets, or strips of india-rubber, leather, woven or other fabric, or other flexible material.

In place of forming portable magnets according to my Invention as previously described, I prefer to employ the magnetic metallic oxide in a pure solid state by converting wire or thin pieces of steel or iron into oxide, by subjecting them to a high temperature in a retort or otherwise whilst exposed to the action of a current of steam.

The magnetic oxide thus prepared is then made up so as to form portable magnets, by enclosing it first in a case or cover of tinfoil, or other non-magnetic metal or material, and which is afterwards enclosed in an envelope of leather, paper, woven or other fabric, or other suitable material, the magnets thus formed being afterwards rendered

permanently magnetic in the usual manner of magnetizing iron or steel.

Portable magnets may be formed in accordance with another part of my improvements by enclosing particles of steel, iron, or magnetic metallic oxide in a loose dry state, and in a thin layer between two pieces of leather, paper, woven fabric, or other suitable material, either in tubes or sheets, the particles being secured in position, either by forming channels or recesses in the inner surfaces of the sheet of material employed, or by sewing or uniting the same together in sections at short distances apart, the edges being permanetly secured together by gum or other adhesive matter or otherwise.

Portable magnets made up as previously described are not liable to become friable or easily broken up and destroyed, being also extremely light and portable.

The magnetizable matter or oxides enclosed as previously described may be made up into garments to be worn upon any part of the body, or it may be employed in making baths, chairs, or couches, or it may made up into vessels or chambers for enclosing or surrounding patients in the application of magnetism for curative or health preserving purposes.

Having thus described the nature of my improvements, and the manner of carrying the same into practice, what I claim is,—

First. The improved construction of portable magnets for curative and other purposes, by enclosing a magnetic compound, or magnetizable matter mixed or combined with gummy, resinous, or bituminous matter, between two surfaces of flexible material, substantially in the manner herein-before described.

Secondly. I claim the construction of portable magnets for curative and other purposes by enclosing magnetic metallic oxide in flexible cases or covers, substantially in the manner herein-before described.

Thirdly. I claim the construction of portable magnets for curative and other purposes, by enclosing particles of steel, iron, or magnetic metallic oxide in a loose dry state, secured between two surfaces of flexible material, substantially in the manner herein-before described.

Lastly. I claim the application of portable magnets constructed in the manner herein-before described for curative and health preserving

purposes, by making them up into garments to be worn or applied to any part of the body or for being used in the construction of baths, chairs, couches, vessels, articles, or chambers for enclosing or surrounding patients in the application of magnetism for the above purposes, substantially as herein-before described.

In witness whereof, I, the said William Darlow, have hereunto set my hand and seal, this Twenty-ninth day of November, in the year of our Lord One thousand eight hundred and seventy-two.

WILLIAM DARLOW. (L.S.)

Witness,

J. G. TONGUE,
Patent Agent,
34, Southampton Buildings,
Chancery Lane,
W.C.

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